

transfer of energy thereto from said radiation beam to  
[dispose] carry the products of reaction [at] to a [pre-  
determined] select location.

2. ~~(Amended)~~ Chemical reaction apparatus in accord-  
ance with claim 1 wherein said first means is operable to  
direct said beam at an angle to [said] the path [of] said  
*b first* matter is conveyed along.

3. ~~(Amended)~~ Chemical reaction apparatus in accord-  
ance with claim 1 wherein said third means is operable to  
direct said beam [parallel to an along] in the direction of  
*b first* said stream and parallel to the path of flow of said first  
matter.

4. ~~(Amended)~~ Chemical reaction apparatus in accord-  
ance with claim 1 including fifth means for forming a second  
stream of second matter which is different from said first  
*E* matter and causing said second stream of matter to intersect,  
*b* mix and flow with the matter in said first stream at a location  
[of said  
first matter] upstream of the [point] location where said  
beam intersects said stream of *first* matter so as to permit said  
beam to react on the mixture of said first and second matter.

*b* 5. ~~(Amended)~~ Chemical reaction apparatus in accord-  
ance with claim 1 including fifth means for forming a second  
stream of second matter which is different from said first  
matter and causing said second stream of second matter to  
intersect [said] the stream of said first matter at the loca-  
*b* tion where said beam intersects said *first* matter so as to permit  
said second matter to combine with said first matter and to  
partake in a [the] reaction effected by said beam of collim-  
ated radiation.

2.  
6. (Amended) Chemical reaction apparatus in accordance with claim 1 including fifth means for controlling the [formation and] rate of flow of said stream of <sup>said</sup> first matter, sixth means for controlling said second means to generate said beam of coherent radiation, and master control means connected to said fifth and sixth means in a manner to [predeterminately] control the chemical reaction effected by said beam when it reacts on the matter flowing in said <sup>first</sup> stream.

Q/b  
7. (Amended) Chemical reaction apparatus in accordance with claim 6 wherein said sixth means is operable to control said second means to cause it to generate pulses of coherent beam radiation which are intermittently directed to intersect said stream of <sup>said first</sup> matter, said master control means being operable [operate] to control the timing of the radiation pulses generated [by controlling] during the operation of said [sixth] second means.

5/8  
8. (Amended) Chemical reaction apparatus in accordance with claim 4 including sixth and seventh means for respectively controlling the operation of said first and fifth means [informing] to control the flow of said streams of said first and second matter and master control means [connected] operable to <sup>selectively</sup> ~~predeterminately~~ control the operation of said sixth and seventh means in effecting a chemical reaction.

Claim 9

Line 3 After "defining" add -- at least part of --.

Q/c  
10. ~~(Amended)~~ Chemical reaction apparatus in accordance with claim 1 wherein said first means is operable to form said stream of <sup>said first</sup> matter [consisting of] as a fluid, ~~such as a gas or vapor,~~ [having] <sup>e</sup> and disposing particles of solid matter [disposed] therein to define said first stream of matter.

11. ~~(Amended)~~ Chemical reaction apparatus in accordance with claim 1 wherein said first means is operable to intermittently form and direct matter defining said first stream along said predetermined path.

12. ~~(Amended)~~ A method [of] for creating a chemical reaction comprising:

controllably directing a fluid as a stream of fluent material along a select path, which path intersects a reaction zone, so as to present molecules of said fluent material [as] in a flow thereof through said reaction zone, and

as said fluent material passes through said reaction zone, generating and directing a collimated beam of intense radiation along a path which intersects said reaction zone such that the radiation of said beam passes through said reaction zone while molecules of said fluid [pass through] are present in said reaction zone [so as to transfer] and transferring sufficient radiation from said beam [at] to said molecules while in said reaction zone [to said fluid] to cause said molecules to partake in a chemical reaction [involving the molecules of said fluid at] while/in <sup>located</sup> said reaction zone.

13. ~~(Amended)~~ A method in accordance with claim 12 wherein said fluid is continuously flowed [as a steady stream] at a constant rate of flow to and through said reaction zone.

14. ~~(Amended)~~ A method in accordance with claim 13 wherein said radiation beam is generated [over a prolonged] for an extended period of time while fluid is flowing through said reaction zone.

16. ~~(Amended)~~ A method in accordance with claim 15 wherein said radiation beam is generated intermittently in a manner to intersect [separate] respective quantities of said fluid which are intermittently [passed through] flowed to said reaction zone.

17. (Amended) A method for [of] creating a chemical reaction comprising:

(a) generating a beam of collimated radiation having sufficient intensity [and energy] for effecting a reaction with respect to particles of matter when said beam is caused to intersect said particles and directing said beam along a select path,

Q3  
(b) controllably flowing a stream of fluent material containing particles of matter [along] through at least a portion of the select path along which said radiation beam is directed, such that the radiation of said beam will be transferred to particles of said matter flowing in said stream during [a substantial portion of] the [travel] flow of said particles [along said select path], and

(c) causing radiation of said [collimated] radiation beam to react on said particles [in] of said stream as said particles travel said select path and to change the state of said particles.

*Sub C1 the material defining said particles.*

19. ~~(Amended)~~ A method in accordance with claim 17, wherein [said] the particles of matter in said stream [comprise a mixture] are formed of different chemicals and wherein a chemical reaction is effected between said different chemicals when said radiation beam is directed against said particles [in] of said stream.

Q4  
20. ~~(Amended)~~ A method in accordance with claim 17 wherein said radiation beam is directed through the center of said stream, said beam is deflected to scan material within said stream and said beam and the material [of] in said stream are directed against the surface of a solid material and are caused to react with at least a portion of said solid material.

*Sub C2*